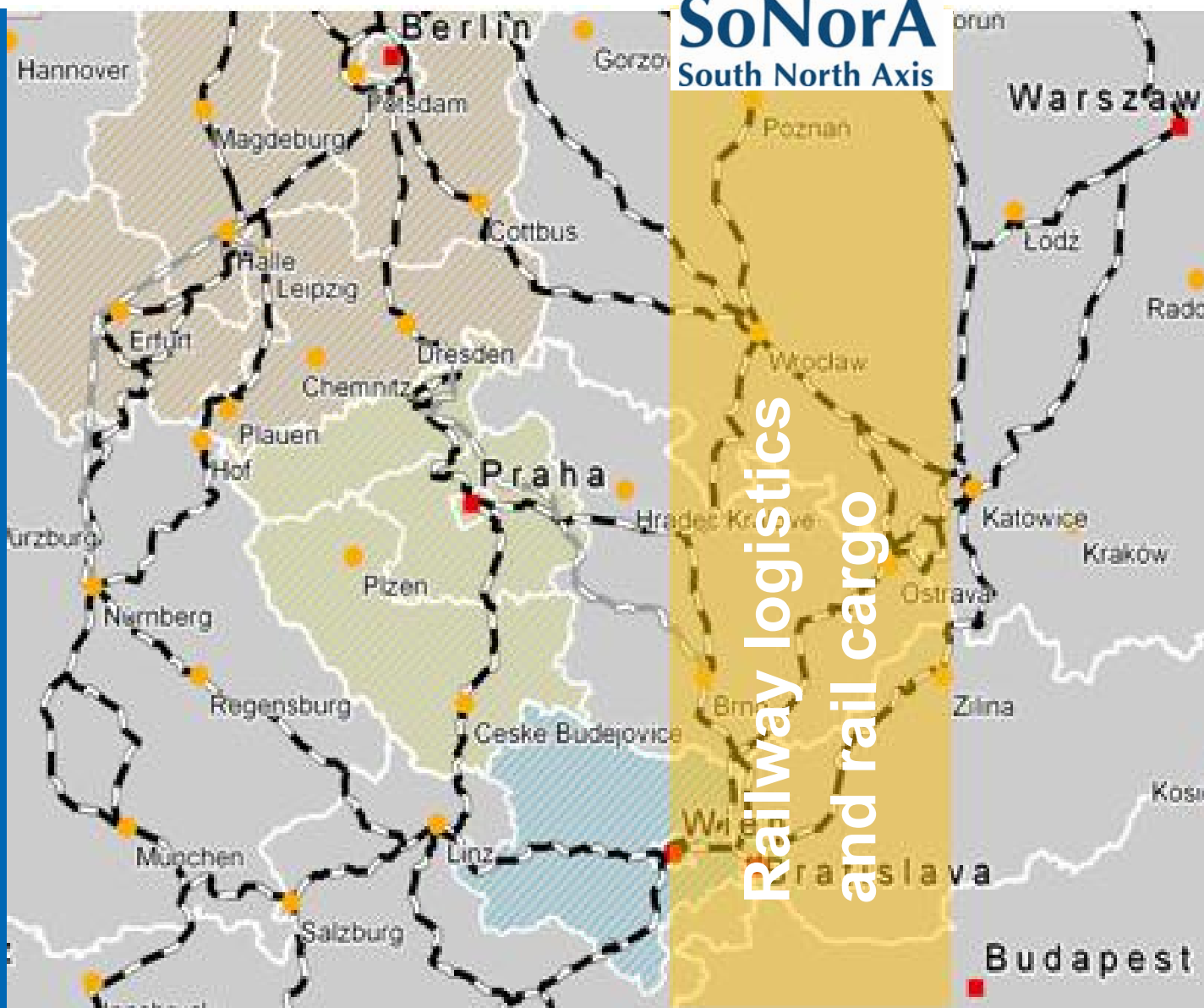


Matthias Gather (ed.)

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SoNorA
South North Axis



Railway logistics and rail cargo

Proceedings of the 5th SoNorA University Think Tank Conference (Erfurt)

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INTRODUCTION

SoNorA (South-North Axis) is a transnational cooperation project of the European Union which aims to improve the infrastructure and services in the south-north orientation within Central Europe. An integral and important part of SoNorA is the University Think Tank as a network of transport scientist which has three main roles and tasks within the project:

Firstly, it aims on the creation and consolidation of a network of universities in Central Europe which are related to research and education in transport and/or spatial planning. These partners participate in SoNorA conferences, round-table discussions, the writing of scientific articles, and further research projects emerged out of SoNorA.

Closely related to point one, the second task of the Think Tank is to generate inputs for the whole project. The Think Tank gives methodological support to project partners and creates strategies and inputs for SoNorA. These scientific papers are presented on separate conferences during the regular SoNorA consortium meetings.

Thirdly, the Think Tank reviews the 24 core outputs of the project which are generated by the project partners. The core outputs will be presented to the Think Tank by the partners on the consortium meetings and then will undergo a scientific review process including ex-post-analysis and best-practice identification.

The Think Tank consists of transport researchers of different faculties of various Central European countries. It is planned to organise ten Think Tank conferences, thus one on each consortium meeting. Each conference deals with a specific topic of transport research which is related to the content of the core outputs to be delivered on that time. The topics of the past and future Think Tank conferences are the following:

No	Date	Place	Topic
1	Feb '09	Praha	Get to know
2	Jun '09	Gdynia	Transport infrastructure between the Adriatic and the Baltic Sea; Transeuropean Networks of Transport in Central Europe; Simulation and modelling, forecasting and infrastructure
3	Nov '09	Potsdam	TEN-T core network; European and national railway policies
4	Feb '10	Portorož	Infrastructure and regional development; Infrastructure, transport and trade; Infrastructure and society
5	Jun '10	Erfurt	Railway logistics and rail cargo
6	Oct '10	České Budějovice	Future of rail freight; Future of inland waterway freight
7	Feb '11	Trieste	Harbour hinterland transports
8	Jun '11	Szczecin	Transport and the environment; Sustainable transport

9	Oct '11	Bologna	Preparation final conference
10	Feb '12	Venezia	Final conference

The last SoNorA University Think Tank conference was held on the 25th of February 2010 in Portorož (Slovenia) and was focused on the topics: Infrastructure and regional development; Infrastructure, transport and trade; and Infrastructure and society.

The conference documented in this proceeding was held in Erfurt, Germany, on the 17th of June 2010. The main focus of this 5th SoNorA University Think Tank conference was about:

- Railway logistics
- Rail cargo

Selected members of the Think Tank have written three scientific papers on different aspects of these topics which were presented at the conference in Erfurt. The authors are from the University of Žilina (Slovakia) and the University of Applied Sciences Erfurt (Germany).

The papers are dealing with logistic centres and their economic effects, with the analysis of rail cargo potentials in areas with low demand, and with the role of rail freight companies in logistic chains.

This is the fourth volume of a series of “Proceedings of the SoNorA Think Tank Conferences” where all accepted contributions of the authors are presented. It shall provide a basis for further discussions and be the start of a successful scientific network in the field of transport and spatial planning.

LOGISTIC CENTRES AND RAILWAY LOGISTIC SERVICES – ECONOMIC EFFECTS

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ABSTRACT

The article deals with the social and ecological, partnership and internal effectiveness of logistical centres which ensure railway logistic services, too. The logistical centre optimises the modal split by a decreased exploitation of road transport. It has a lot of positive impacts on environment, mainly climate change, air pollution and accidents, but also congestion and noise. The principle of partnership in logistical networks is the attainment of benefits and the coordination of interconnected processes, allocation of economic advantages but it is also concerned about disadvantages. Internal effectiveness allows for advantages and disadvantages inside logistical centres. It concerns mainly the optimisation of costs. There are described risks of transport and logistics in the Slovak Republic and possibilities to participate in European logistical centres.

1 INTRODUCTION

In the American Heritage Dictionary logistical centres are defined as: “centres performing a broad spectrum of logistical functions and business processes. The term combines logistics, which refers to all operations required to deliver products or services excluding producing the goods or performing the services, which stands for a place where a particular activity is concentrated.” [1].

According to the international organisation EUROPLATFORM the logistical centre is defined as a transport-businesses area where all the activities are performed relating to carriage, logistics and distribution in the national and international coherence and these activities are supplied by different operators. The logistical centre has to provide all the equipments in an order that presented activities could turn into effect. The logistical centre should be located next to urban areas with a lot of industrial parks, motorways and railway lines and areas with sufficient traffic flow volume.

The foremost tasks of logistical centres can be summarised as follows:

- integration of different modal splits into traffic chains,
- projection and realisation of comprehensive logistical chains between suppliers and consumers,
- realising different logistical tasks for clients,
- preparing, realisation and repair of needed infrastructure for partners,
- preparing, realisation and repairing of required informative, managing and communication systems.

2 LOGISTIC CENTRES AND ECONOMIC EFFICIENCY

Effectiveness in the logistics can be defined such as assignment of the required level of logistical services following acceptable total social costs. It is needed to make differences between social and ecological, partnership and internal effectiveness.

2.1 Social and ecological effectiveness

Social effectiveness is related to all aspects induced by logistics. The aim is not to burden social and ecological costs of the organisations which are involved in logistical network. The social and ecological effectiveness can be following:

- stimulation of general economic development in region,
- optimisation of modal split,
- stimulation of combined transport,
- optimisation of material distribution by assigning material packages to vehicle and route optimisation,
- more effective exploitation of actual transport infrastructure,
- decreasing of frequency of traffic flow in the towns,
- reduction of environmental costs by road transport, etc.

The logistical centre optimises modal split by decreased exploitation of road transport. It has a lot of positive impacts on environment, mainly climate change, air pollution and accident, but also congestion and noise. These are the costs that transport users impose on society and which are financed by the society as a whole.

Figure 1 shows the comparison of evolution of road and rail freight transport demand and GDP EU 25 in the period between 1995 and 2008.

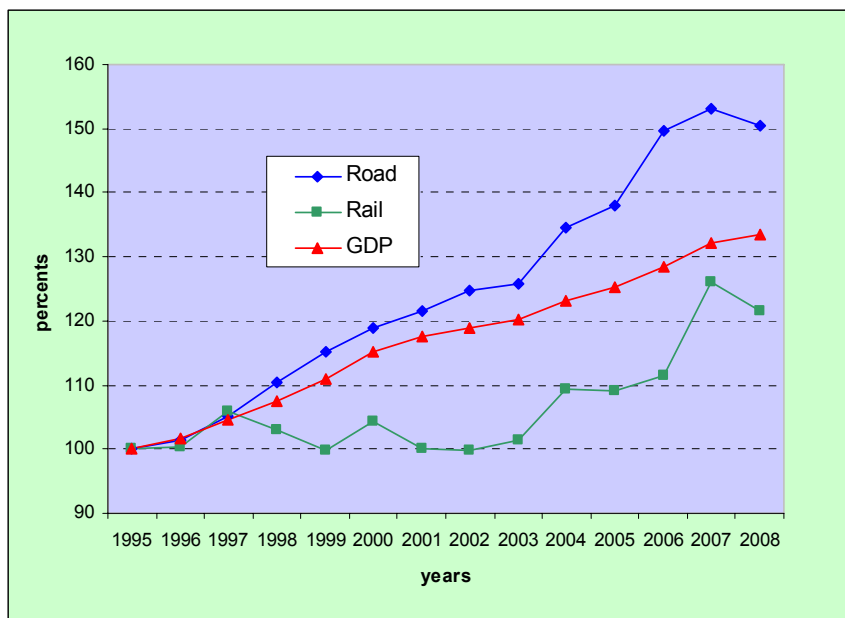


Figure 1: Evolution of road and rail freight transport demand and GDP in the period between 1995 and 2008 [3, 7]

The largest share of intra-EU transport is carried by road, which accounts for 44% of freight transport. Demand factors, such as a reduction in heavy bulk transport and the increasing importance of door-to-door and just-in-time service, undoubtedly contributed to the strong sustained growth of road transport. Demand of road transport is closely linked to economic growth. In times of economic growth, road freight transport usually grows faster than overall GDP. Although a major contributor to growth, transport also involves a cost to society. The cost of road congestion is estimated to amount to an equivalent of around 1% of EU GDP per year.

The following Table 1 presents the comparison of external costs of road and rail freight transport in accordance with the “Handbook on estimation of external costs in the transport sector” [5] using a load factor.

		HDV		Freight Train	
		Unit cost value		Unit cost value	
		Urban	Interurban	Urban	Interurban
Noise	Day	0.61	0.09	0.12	0.11
	Night	1.12	0.17	0.49	0.19
Accidents		0.92	0.23	0.02	0.02
Air pollution	Diesel/Train Electric	0.93	0.73	0.00	0.00
	Diesel/Train Diesel	0.93	0.73	1.05	0.88
Climate change	Diesel/Train Electric	0.23	0.19	0.00	0.00
	Diesel/Train Diesel	0.23	0.19	0.08	0.08
Up- and down-stream processes	Diesel/Train Electric	0.27	0.23	0.13	0.13
	Diesel/Train Diesel	0.27	0.23	0.10	0.10
Nature and landscape		0.00	0.10	0.00	0.02
Soil & water poll.		0.09	0.09	0.02	0.02
Day (Diesel/Electric)		3.04	1.66	0.29	0.31
Day (Diesel/Diesel)		3.04	1.66	1.40	1.24
Night (Diesel/Electric)		3.55	1.74	0.66	0.39
Night (Diesel/Diesel)		3.55	1.74	1.77	1.32

Table 1: External costs by cost category for road and rail freight transport in €/tkm [5]

There were used unit costs average load factors from TREMOVE model outputs (EU 19 average values) following:

- Heavy duty vehicles (HDV) urban – 11.4 tons/vehicle,
- HDV interurban – 11.7 tons/vehicle,
- Freight train – 348 tons/train.

Realisation of logistical centre with railway logistic services in regions has a positive influence on economic development because there is a possibility to await inflow of investment in the construction of new productive and service equipments, decreasing of unemployment, increasing attraction of the region. Managers of logistics centres should work closely with owners, builders, designers and contractors to supply material and equipment on time.

2.2 Partnership effectiveness

Partnership effectiveness appertains to relations between suppliers, consumers, mediators and clients who participate in concrete logistical network. The principle of partnership in logistical network is to achieve benefits of coordination processes, allocation of economic advantages but also to reduce internal costs. It is necessary to provide so that partners, which will have higher costs, feel the results of total benefit. This principle can be denominated as a “win-win” principle.

The partnership effectiveness can be summarised as follow:

- favourable conditions for mutual cooperation carriers; they can make use of infrastructure, informational and communications system of logistical centre,
- favourable conditions for profitable economic cooperation between carriers and clients who order the traffic services,
- all handling operations can be automated,
- it is possible to optimise the use of transport capacity,
- small and middle enterprise can also be integrated into transport chains,
- industries can benefit from a reliable, flexible and cost-effective transport,
- increasing of logistical output of enterprises by use of quality logistical services,
- material stored in logistics centre can be used in the system just in time,
- it is possible to increase non effective sources in the production etc.

Production companies seek to reduce production time and reduce logistic costs. From this perspective, it is expected to increase capacity respectively efficient use of logistics centres.

2.3 Internal effectiveness

Internal effectiveness is related to advantages and disadvantages of logistical centres. It concerns mainly optimisation of costs. With regard to a lot of activities which are accomplished in logistical centres it is suitable to use the method of Activity Based Costing. This method refers costs to separate processes in agreement with cost drivers. The method assigns relevant costs according to concrete processes and concrete customers or its partner.

Proceeding of method Activity Based Costing:

- limitation of activities and their total costs,
- definition of directive factors in favour every activities,
- calculation of cost rates of activities,
- consolidation of activities to compact processes,
- calculation cost of processes, products, chains,
- analysis of height and structure of costs of processes, products, chains and identification of potentials for improvement.

The method is not only an instrument for measuring costs but also for the analysis of their causes and for looking for space for improvement.

In a logistical centre the following separate cost activities can be defined:

- administration and engineering of customer order,
- warehouse merchandise,
- manipulation by separate handling device,
- reloading,
- transport modes etc.

The effectiveness in the logistical centre is negatively affected by failure to meet delivery deadlines. If delivery times passed over, there will be problems in other processes and will raise both internal and external losses. If logistical centre want to improve delivery time it have to know what kind of values are reaching it and what it will cost.

For evaluation it is possible to use indicators of delivery time which should reflect:

- frequency and number of trucks that were not delivered on time,
- number of deviations from the agreed delivery times,
- difference between delivery time estimated by clients and real negotiate delivery time.

The costs are possibly optimised by using E-commerce services which add value by replacing physical paper-handling practise such as ordering with electronic ones, thus reducing cost and time. When the logistic centre is equipped with the necessary information systems, it can apply e-commerce service such as vender managed inventory to reduce lead time and costs while increasing supply chain reliability.

3 SITUATION IN THE SLOVAK REPUBLIC

In the Slovak Republic, the most affordable, fastest and most comfortable mode of transport is road, which harms the environment with noise, dust, frequent accidents and above all exhaust gases. The busy lorry has an unfavourable impact on the life of people in many cities.

In the trend of goods road transport in the Slovak republic are recorded increases mostly in all reporting years. There was reported increase in the volume of goods carried in tonnes in 2008 compared to 2007, while volume of goods transported by rail transport was declining. In the structure of goods carried by modes road transport is predominant in the period of 2000 - 2008. Figure 2 bellow provides a comparison road and rail freight transport with GDP growth.

During the period 2000 - 2008 the road freight transport was developed such as economic growth. The increasing share of road freight transport on the division of transport labour is a consequence of the growth dynamics of the economy and growth in international freight transport market after the liberalisation of the EU. In the field of goods transport, there are two main opposing tendencies currently. On the one hand, to increase the quantity of transported goods, and making best use of volume and total weight of vehicles and transport equipment. On the other hand, in the application of logistics in the circulation process and improve the quality of service are growing requirements for the transport of smaller quantities of goods.

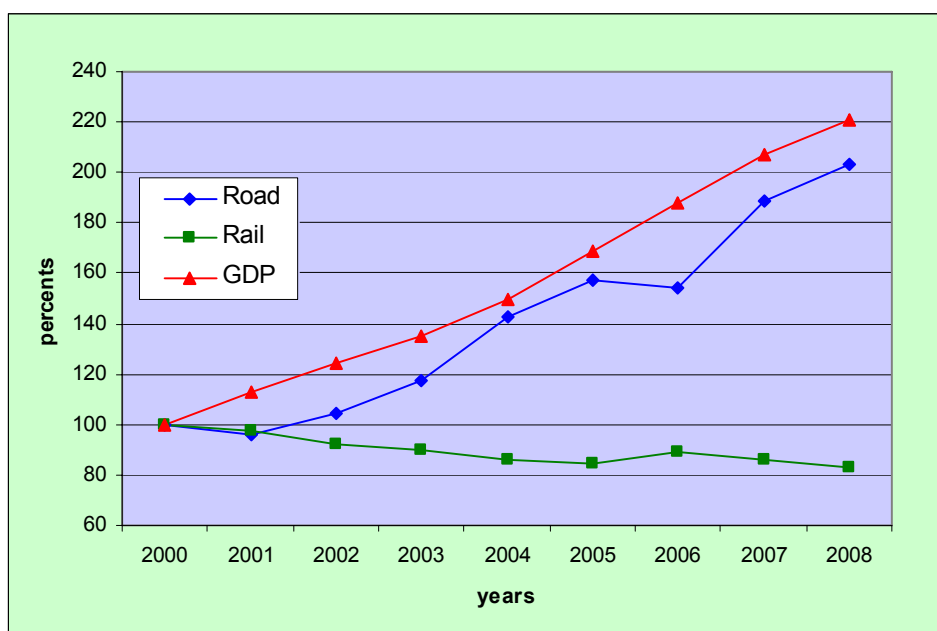


Figure 2: Evolution of road and rail freight transport demand and GDP in the period between 2000 and 2008 [8,9]

The current trend of transport in the Slovak Republic is increasingly influenced by the flexibility of road transport, due to the changing conditions of the economy at the expense of environmentally friendly modes of transport. Continual increasing of the performance of road freight transport and individual car transport caused a number of problems with congestion, traffic accidents, production of pollutant emissions and so on. This development is detrimental in terms of sustainable mobility. Therefore there are built logistic centres with all services including railway logistic services.

In the Slovak Republic a logistic centre is defined as a regional supplier/customer node which provides traffic and manipulation services, ensure the production and sale of products according with Government Ordinance of the Slovak Republic Nr. 193/2001. By definition given that logistic centre can be a place which has only connection to the network of roads therefore transportation is provided specially of road transport. That is why within the frame of utilisation of financial means out of Cohesion Fund and EU Structural Funds there is defined benefit of building public transport intermodal terminal.

The strategic document for draw funds of the EU Funds in transport is Operational Programme Transport which is one of eleven operational programmes in the National Strategic Reference Framework. Operational Programme Transport is divided into seven priority axis and in him is defined four company such as final beneficiaries of financial assistance:

- Železnice Slovenskej republiky – ŽSR.
- Železničná spoločnosť Slovensko, a.s. – ZSSK,
- Národná diaľničná spoločnosť (National Motorway Company),
- Slovenská správa ciest (Slovak Road Administration).

The following Table 2 presents Financial Plan of Operation Programme Transport for programming period 2007 – 2013 accordance with priority axis.

Priority axis	EU Funds [€]	National Funds [€]	Total [€]	Co-financing rate [%]
Railway infrastructure	782 746 878	138 131 802	920 878 680	15
Road infrastructure (TEN-T)	972 333 473	171 588 260	1 143 921 733	15
Intermodal transport infrastructure	102 620 947	18 109 579	120 730 526	15
Infrastructure of integrated transport system	471 794 200	83 257 800	555 052 000	15
Road infrastructure	740 794 961	130 728 523	871 523 484	15
Railway public passenger transport	88 510 567	88 510 567	177 021 134	50
Technical assistance	48 103 569	8 488 865	56 592 434	15
Total	3 206 904 595	638 815 396	3 845 719 991	x

Table 2: Financial Plan of Operation Programme Transport to priority axis [6]

Under priority axis 3 four new public transport intermodal terminals should be constructed in Bratislava, in Žilina, in Zvolen and in Košice. Currently there are only private terminals in the Slovak Republic.

4 RESULTS AND DISCUSSION

In the Slovak Republic (SR) there is not existing logistical centre, there are only bigger or smaller logistical parks. Risks of transport and logistics in the SR can be summarised as follow:

- the development of transport and logistics is influenced by intensive demand of dominating multinational foreign companies which have highly-developed technologies and are exposed to global competition,
- the quality of transport infrastructure does not correspond with requirements of logistics and logistical infrastructure with the highest added value up to the mark 3PL, 4PL and 5PL operators,
- the logistical parks are used only by road transport,
- additional expected overloading of road and motorways network but railway network too in the near future and emerging environmental risks,
- the risk of oil crises with impact to road transport mainly, railway transport assign of considerable measure of resistance,
- the necessity of using the most overloading railway European junctions and transport European centres (Germany, Netherlands); in the future it should be used by the division of labour in the order to avoid shipments trough this critical points,
- reluctance to create effective operation transport as a whole and preference own interests of different special interest group etc.

The Slovak Republic could have a good position in the European logistical network due to its location and the border with the Ukraine. What is needed is support from the state to build high-quality logistical centres.

5 CONCLUSIONS

The logistical centres should contribute to the development of the region in which they are situated or in which their construction is planned. It is necessary to build them as multimodal centres for a wide range of logistic services including railway logistic services.

In the current global economy there are formed very strict conditions for preciseness, reliability and flexibility of delivery. These conditions require modern information and communication, including transport and handling technologies. All this can be achieved by the implementation of quality logistical centres. It is important that the Slovak Republic will support them not only financially but by media. Their construction will contribute to the creation of trans-European multimodal system, which aim to link Asian and Pan-European transport system.

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ANALYSIS OF POTENTIALS OF RAIL FREIGHT IN AREAS WITH LOW DEMAND

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ABSTRACT

Particularly secondary railway lines with low demand are hardly operated efficiently in an economic point of view. Thus the closing of these lines are often discussed. Nevertheless these lines in many cases are of high importance for the transport policy and the conservation needs innovative business concepts and/or the development and exploitation of yet unused demand potentials. Hereby specific analyse for uncovering and assessing possible potentials (potential analyses) are helpful. Essential components of potential analyses are macroanalyses and micoranalyses. Macroanalyses are referring to a region or a line and provide fruitful starting points for more detailed investigations, which are the purpose of microanalyses. The present article deals with the realisation of potential analyses.

1 MOTIVATION

Since a long time, in rail freight transport analyses are usually covering the most different aspects. Hereby the main focus was put predominantly on well-chosen points of view. This could be e.g. a business management investigation or a railway engineering (see [5]) analyses. Nevertheless, in particular from the area of the spatial planning (see [2]) more complicated methods for answering complex questions were developed increasingly. From this are originating the so-called potential analyses (see figure 1).

This kind of analysis mainly deals about how much potentials do exist in the catchment area of a railway line or a network and how these potentials could be explored for rail transport. Hereby, many aspects have to be considered, which could be of business management, spatial planning, political, technical, railway-engineering or logistical nature.

Potential analyses serve to uncover possible transport needs. It can concern not yet covered needs or beginning points for the competition. Here such analyses are looked from the point of the railway freight traffic.

The motivation for the realisation of potential analyses can be different and depends on the partners. For railway enterprises the knowledge of possible potentials is important for the adjustment of their business activities.

But also for the public management such analyses are of interest. They use the results for spatial planning and economic policy purposes. This is significant in particular against the background of the drastic structural changes, the demographic development to be expected, and the financial basic conditions. By big and evident changes of the transport demand (e.g., in connection with the establishment or closing of important industrial facilities) investigations are usual to the subsequent effects for a long time and integral component of planning processes (see e.g. [4]). Far less experiences are given with evolutionary, spatially distributed economic change processes. In these cases the changes are less evident and are more difficult in their effects to estimate. Therefore, the questions are the essential field of potential analyses.

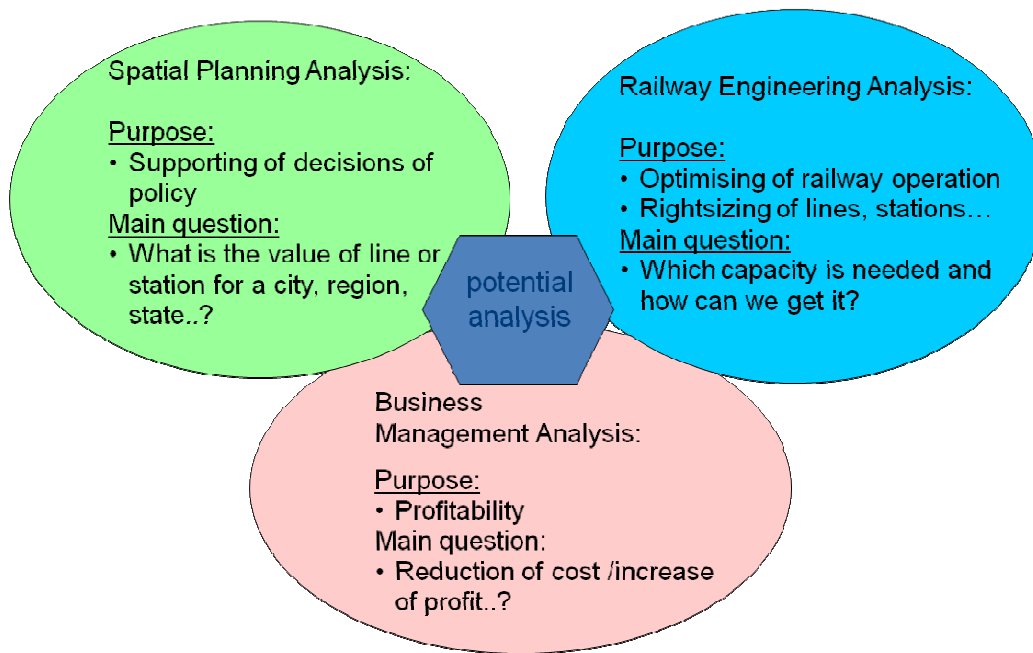


Figure 1: The sphere of potential analyses

2 THE REALISATION OF POTENTIAL ANALYSES

During the last years many potential analyses were carried out within the scope of research projects (see e.g. [1]) and student projects in Thuringia (see e.g. [2]). Hereby, experiences could be collected and suitable know-how could be developed.

The realisation of potential analyses requires concrete reasons. Initiators of such plans are often authorities or railway enterprises. Authorities often need an improved base of information for decisions on infrastructure measures. The aim is to find out among other things where the business development can be carried out by investments in the regional infrastructure or existing restrictions to be diminished. Other motivations are deliberate traffic misalignments. Thus it is absolutely desirable, e.g., for local authority districts with adjustment on the tourism to minimise heavy duty transport in local situations by shifting traffic to the rail.

Railway infrastructure enterprises need information to be able to decide on investments or in cases of very low extent of utilisation about their back construction or closings. Rail traffic enterprises need similar information, for the adaptation of their achievement offer of the respective need. On this base if necessary they can develop new offers or not reduce demanded achievement offers any more on time [3].

If the decision is for the realisation of a potential analysis, analysis process runs off shown in Fig. 2.

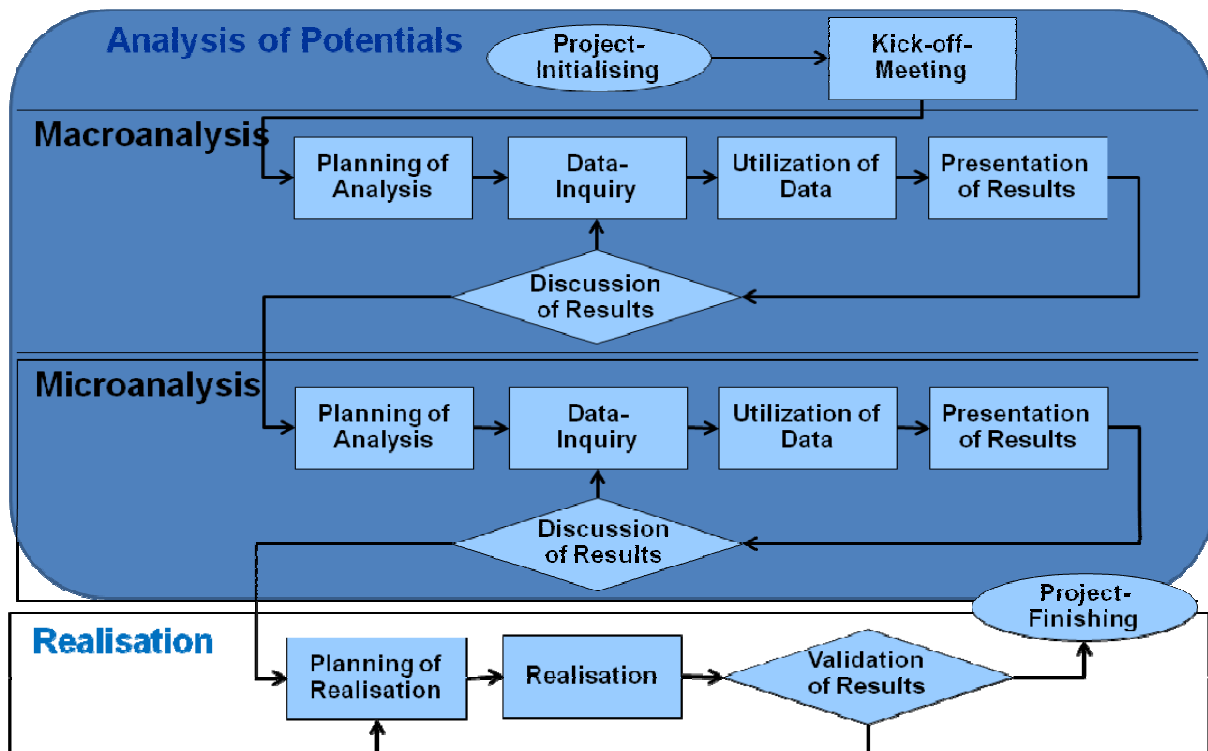


Figure 2: Expiry of potential analyses (principle representation)

Macroanalysis and microanalysis stand in narrow connection (see Fig. 2). Partially it is fallen back on the same data base which is used, nevertheless, on different level of detail.

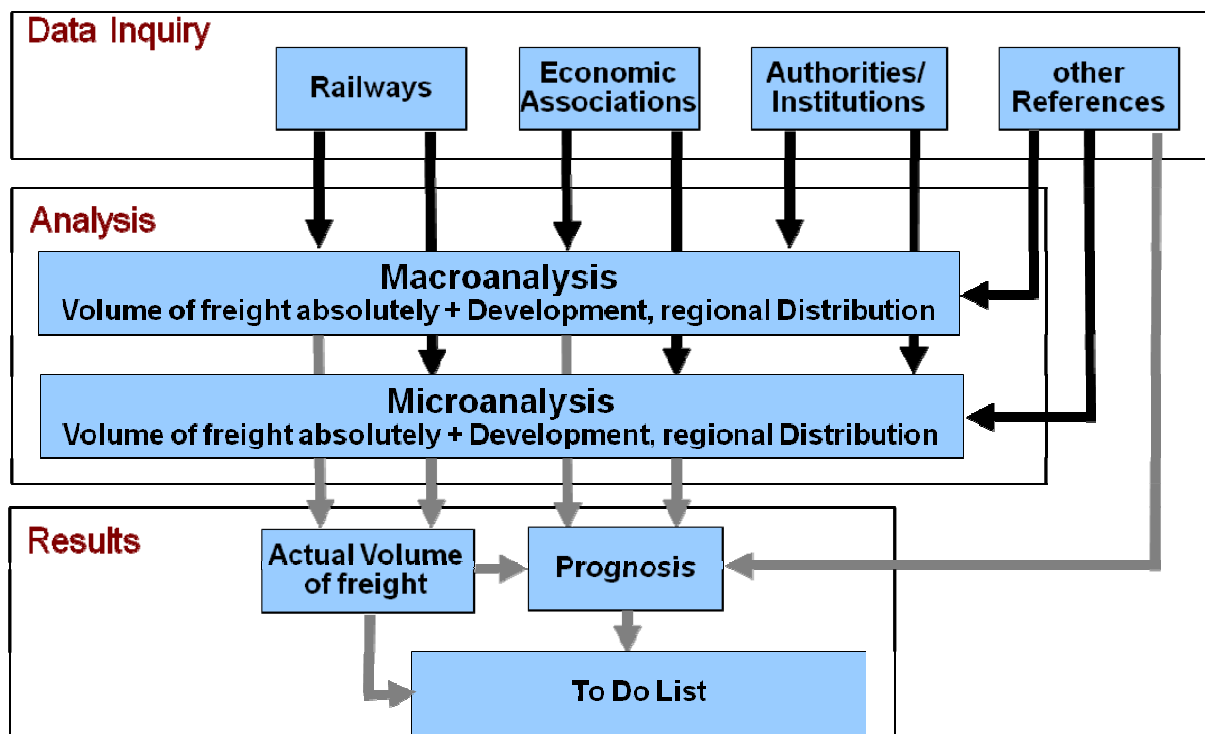


Figure 3: Macroanalysis and microanalysis as a principal item of potential analyses

The macroanalysis has covered the following aims to the investigation space:

- Inquiry and representation of the available transport infrastructure and their state as well as foreseeable changes
- Capture and representation of the main traffic flows and more possible future developments
- Statement of indicators for not yet opened traffic potentials
- Spatial classification of the traffic potentials
- Check of these potentials on plausibility

Files, publications and other documents form the basis for this step of the analysis with priority on:

- Railway enterprises,
- Industrial enterprises,
- Trade associations,
- Authorities and institutions.

Information of the railway enterprises about the railway infrastructure and about the railway company is needed. Above all for the characterisation of the infrastructure the following information is necessary:

- Railroad lines,
- Accesses to the trackage (e.g. siding tracks, loading sidings) and
- Marshalling yards.

It can be important, besides this, to investigate the geographic situation, removal, architectural state, kind of energy supply, existing restrictions of utilisation among other things.

Information about the operation (e.g., timetable, operation concepts, service times, extent of utilisation) in the status quo rounds up the picture. Out of this reserves or restrictions become evident among other things.

Today as potential customers of the road industrial enterprises are considered predominantly, if necessary, however, also other enterprises (e.g. bigger trading ventures, logistics service providers, energy providers or raw material suppliers). An essential criterion is, on this occasion, whether the enterprises dispatch rail based property and/or conceive. It concerns rail based property when it should be admitted for the rail transport suitably, and be transported in such amounts that this is economically attractive. Hereby, the good amount should be protected in the longer term to be passed customer relations have the railways of course data material. About possible customers information from other sources must be procured. Here data about the economic structures of a region are beside the publications of the enterprises (e.g., homepages, business reports among other things) necessarily. This data exists at authorities and institutions, however, also with various trade associations. Nevertheless, the different data sources are not easy to open. Furthermore, data protection and inconsistencies causes difficulties with regard to:

- the accessibility to the data

- the used data structures,
- the capture or relation periods and
- base factors.

Besides, the study area is not mostly identical or is varying. Thus, e.g., the administrative borders do not always agree with the operating areas of the railways. Besides, the allocations are changed to operating areas when required.

Results of the macroanalysis are:

- an overview of the transport infrastructure and of the traffic flows in the current situation covered to suitable geographic structures,
- a prognostic evaluation for the future development and
- worthwhile objects or areas for detailed investigations.

The level of detail of the results depends on the quality of the base data. Generally own surveys are not carried out in this phase.

The results of the macroanalysis are unconditional with the client starting to evaluate. Often also other affected persons or involved partners are to be included sensibly. On basis of the results of the macroanalysis objects and approaches are developed for the microanalysis.

The microanalysis refers to the traffic potentials identified within the scope of the macroanalysis in the form of concrete objects (e.g. enterprise), branches or areas with industrial structures. It has comparable aims like the macroanalysis. Indeed, a higher level of detail is aimed and possibly an assessment of the ascertained potentials or the conditions for their development.

In addition more detailed evaluations of the available data supplies are necessary. Partially used data can be already analysed further in the macroanalysis. According to the state of affairs other data must also be procured if necessary. Own surveys are often unavoidable in addition.

To the identification, however, also for the judgement of possible potentials the knowledge of specific circumstances in single branches is essentially. Partially interaction also exists between different economic areas.

In some cases known potentials cannot be opened because other traffic bearers offer more favourable terms of utilisation or pass resistances compared with the use of the railway. Here the so-called regional conferences in which actors of a certain partial region step under inclusion of a presenter directly with each other in contact have been useful.

Results of the microanalysis are covering to the examined objects or areas:

- more detailed overviews to the transport infrastructure and to the traffic events in the status quo
- prognostic evaluations for the future development and
- statements to the usability of the found potentials as well as for it necessary conditions.

Essential aid for the analysis is the visualisation of the ascertained data. This is valid for both analysis phases. Often connections can be recognised only by a projection of essential relation data on geographic base representations or be made clearly better. Besides, geographic information systems (GIS) provide invaluable assistance (see Fig. 4).

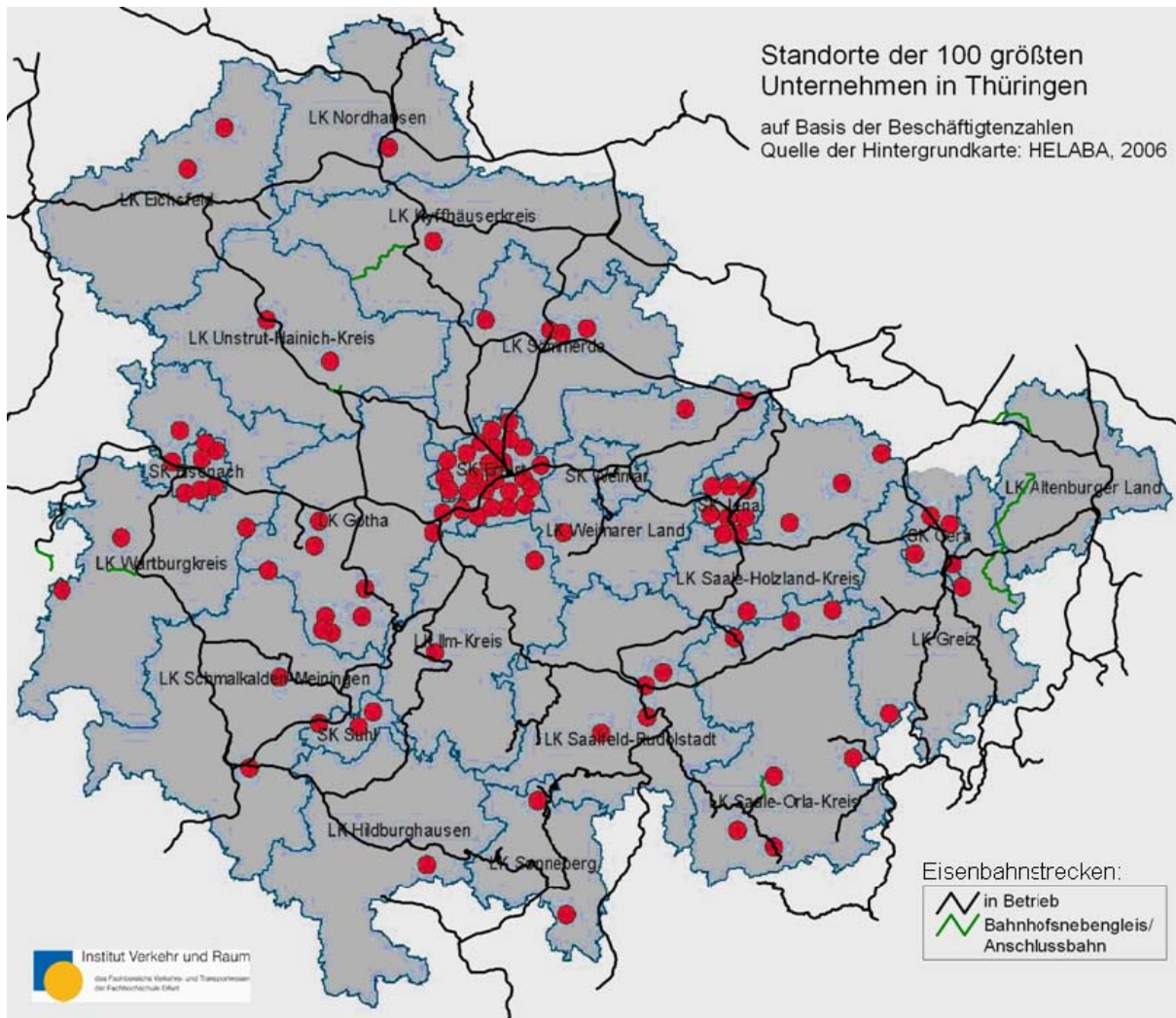


Figure 4: Locations of 100 biggest enterprises and railway lines in Thuringia [2]

All together for the actors recommendations arise from the results of the analyses.

To the conversion of action recommendations partly direct contacts with the potential customers of the railways must be built up. According to state of affairs external support can be necessary here also for the railways. Reasons for it are among other things:

- lacking experience and/or personnel equipment of the railways with suitable professional forces for these duties,
- image problems of the railways resultant from mistakes in dealing with the customers or service deficits in the past,
- communication problems between the railways and their customers.

All together it seems that not all identified potentials can be opened practically. Next to unequal basic data also different planning horizons and flexibility play a role among other things. While railway infrastructures are very long-lasting assets and can be pursued only with long-term use profitably, many industrial enterprises are able only to short-term statements (e.g. with regard to the inquiry). Shorter and shorter innovation, order cycles and cycles of delivery demand to high flexibility. The railways cannot satisfy this short-term and often varying inquiry in every case.

3 CONCLUSIONS

Potential analyses have developed as useful tools to the identification of traffic potentials. In particular facing the background of high economic dynamism and radical changes of the basic conditions (e.g. global competition, financial basic conditions and demographic change) the knowledge of inquiry changes for the actors at the traffic market, however, also for authorities and institutions is of growing interest. Hereby, the aim is to focus its necessary decisions very optimally on the expected conditions. It is important not only to recognise radical changes of the economy, but also less evident evolutionary, spatially distributed economic changes. In these cases potential analyses are usable in this kind. Principal items of this investigation method are mutually co-ordinated macroanalyses and microanalyses.

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ROLE OF RAIL CARGO COMPANIES IN LOGISTIC CHAINS

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ABSTRACT

The main feature of railway companies should be their development to higher performance, productivity and efficiency. Increasing of the market share and achieving a faster growth compared with the competition requires applying the manager systems, supporting of the marketing approach and exercising of information technologies. Customers with their requirements are coming on the central demand in the field of cargo transportation, too.

The paper focuses on the position of rail cargo companies on the railway market and its role in the logistic chain. The paper gives an idea of a transport and logistics process portal that should provide all the services, which the customers' process consumes from the customer's point of view. The railway company would be a coordinator of the logistic chain and a subject, which the customer communicates with.

1 INTRODUCTION

The market has changed from a market where the producers dictated, to a market, which is controlled by the customers. Logistics chains are created instead of bulk cargo transport and transport of piece goods with greater value and delivery door to door are preferred. An important prerequisite to increase the share of rail transport is to provide comprehensive and timely information to potential carriers.

The main feature of railway companies should be their development to higher performance, productivity and efficiency. Increasing of the market share and achieving faster growth requires to apply manager systems, to support of the marketing approach and to exercise of the information technologies. Customers with their requirements are coming on the central demand in the field cargo transportation, too. Technologically, more potential of the opportunities is offered via the internet. Moreover, in conjunction with process portals it is possible to achieve the benefits of rail transportation in conjunction with process portals.

The paper focuses on the position of rail cargo companies on the railway market and its role in the logistic chain. The paper gives an idea of a transport and logistics process portal that should provide the customer's point of view all the services, which the customers' process consumes. Railway company would be a coordinator of the logistic chain and a one subject, which the customer communicates with.

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2 PROCESS PORTAL

The conceptual fundament of process portals creates internet portals, operational systems and Custom Relationship Management (CRM) systems. While the internet portal is a web site with certain attributes only, the process portal is an operational-economic concept that supports the orientation to customer process by using the internet portal.

Process portal is a custom interface. Portal operator focuses on products and services of different suppliers and third parties in cooperation. They are specialised in the production of competitive products and delivering them through a process portal. If portal operator produces some products or services, it can combine them with partner's products on own portal. The activities of the process portal are not providing explicitly via the internet, but according to applicability may be used optional sales channel, which are identified as "one-man" "man-machine" and "machine-machine". On the economic ground most of activities and information are offered via the internet.

The starting point of assessment of user's aspect is the customer's request that has an influence to their benefits, dependence and satisfaction with the portal services. On the ground of this requests Schmidt [5] deduced the measures, which the portal operator should take into account. It realises the customer's requirements (saving of time and of expenses, additional benefit, confidence and satisfaction). The point is the retention of neutrality to the business partners by the operation of the process portal operation.

An integral part of the operation of the process portal operation is the implementation of the customer relationship management concept.

3 CUSTOMER RELATIONSHIP MANAGEMENT

Reply to the question how to obtain and to upkeep customers offers the concept CRM – customer relationship management, which makes possible to understand a great number of individual customers, to adapt the offer to their needs, and to know and manage their value for the company. The potential and the possibilities of the internet are more and more used. In connection to process portals, that presents the extension of the internet portals about the aspect of complex support of customer process, is possible to achieve great competitive advancement for rail cargo company [2].

Customer relationship management is a complex of marketing, communications, sales and services process in a business company supported by appropriate organisation structure and technologies, which enables systematic managing of relationships with customers and form the offer according to their desires and needs. These relationships have direct influence to the rationalisation, optimisation and generally effectiveness of all activities, which are connected with these relations.

The fundamental part of customer relationship management is the integrated understanding of the process marketing, sales and services, which termination is according to process activities, as well as contacting the customer and closing the contract. Showing the whole potential of CRM requests a continuous information flow between the processes.

Efficiency of the CRM process is supported by the IT solutions. The principal fundament of the solution CRM is a data warehouse and the applications which enable to sort and to analyse of the customer data. The key question is the rebinding of all the CRM system components and the integration with the others business systems and process as well to define the sales channels to customers (face to face, telephone, internet, etc.). The most important sales channel becomes the internet. The company should have an integrated view to customer through all the sales channels.

4 IMPLEMENTATION OF PROCESS PORTAL IN RAIL CARGO SECTOR

Railway freight operators publish information on the scope of their activities as well as added information on their websites. There are mainly:

- Company Profile, offices and contacts
- Products and services Offer
- Regulations and directions, technical terms,
- Information Service
- On-line services
- Map of website and others.

There are only a few railway companies with the ambition to create a website, or even a process portal. This idea, however, offers many benefits that lead to the attractiveness of rail transport. The disadvantage of rail transport is a big technological difficulty of transport and transportation processes and also the base of a complex structure of rules and tariff conditions.

The first procedural step to create a process portal is the internet portal creation, where are collected all the necessary information and contacts. It is focused on these users:

- Railway undertakings – railway operators
- Carriers (customers)
- Railway infrastructure
- Forwarders
- International associations and organisations of railway transport
- Owners of rolling stock
- Government bodies
- Secondary schools and universities with transport or economic focus
- Entities engaged in the field of railways
- Media.

The second step is the development and implementation of process portal in the transport sector. The portal aims to support the entire customer process related to transportation, logistics and additional support services, not just the transfer of goods from point A to point B, but a comprehensive sector product (see figure 1).

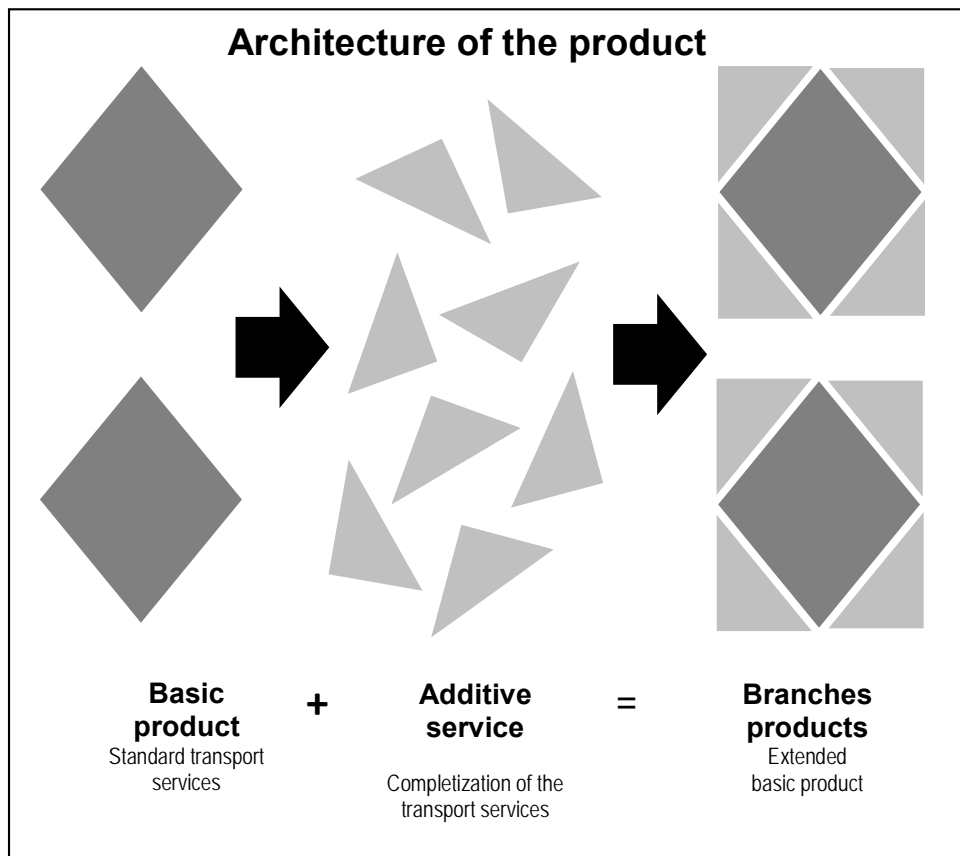


Figure 1: The structure of the branches product [5]

The reorientation of railway operator to customer-orientation requires to know not only at least the costumer's transportation needs but also their wider context. Figure 2 shows the components of logistics concept with use of railway. The cargo operator provides currently only the railway transport and transport-contracting activities. Logistics activities within according to logistics concept are implemented at the enterprise level currently. Forwarder is a link between the providers of transport services (railway company, other railway operators) and customers (production company with its own logistics concept). Currently the railway cargo companies are passive elements in the transportation chain as only the customer (or on behalf of the forwarder) orders the transportation. Forwarder typically performs coordination of transportation of individual carriers.

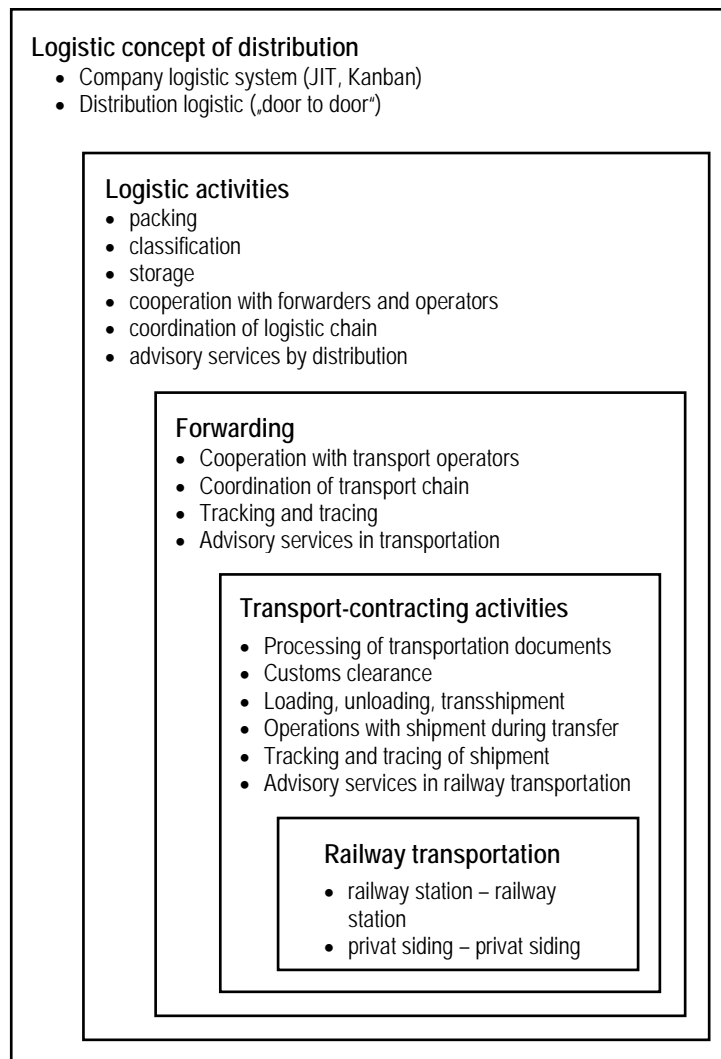


Figure 2: Position of railway transport in logistic system

The customer requests a complex of products and services in the transport customer's process. If he looks for it by himself, normally he has to contact many operators and forwarders, evaluate their offers and performs the coordination of the all processes. There are sometimes processes, with which he has only little experiences.

The modern transport operators' accedes to the support of the whole customer's process. There are offered to customer all the products, services and information to costumers on one place – on the process portal. The operator of an internet portal can be any body acting in the market of transport services (road carrier, railway operator, logistics operator, forwarder etc). They are integrators and specialists for the process. There are integrated their services with the services providing by the cooperating partners.

Railway operator as a process portal operator would have great chance to be a coordinator of the logistic chain and to be a one subject, who the customer communicates with. The railway operator creates with his partners the comprehensive offer of services - planning support, transportation and logistics activities, providing information about the activities. It subserves the role of the forwarder too, whereas prefers a rail transport. There must be provided not only superior transport services, but also an additive and logistic services. By the others providing services must be determined „make or buy“– it means the services should be produced in own conditions (e.g. to buy the freight road vehicles and to

provide the distribution by the road to the customer) or make outsourcing. The important thing is to catch the neutrality among the partners.

The general structure of potential partners, the portal process of the railway transport operator is shown in figure 3.

The supposed process portal for transport and logistics should provide all the services from the customer's view, which the customers' process consumes. The process portal model includes the process and activities of the portal operator, where the CRM process (see figure 4) plays the main role. There is a possibility to sort the individual activities according to the intensity of individualisation in to standard activities that are provided for all customers and in to individual activities, that are adapted to the individual customers requests. From the view of process portal operator we can classify the activities in the activities that are provided by operator and that are provided by partners. There are the key activities, additional activities and infrastructure activities (IT infrastructure).

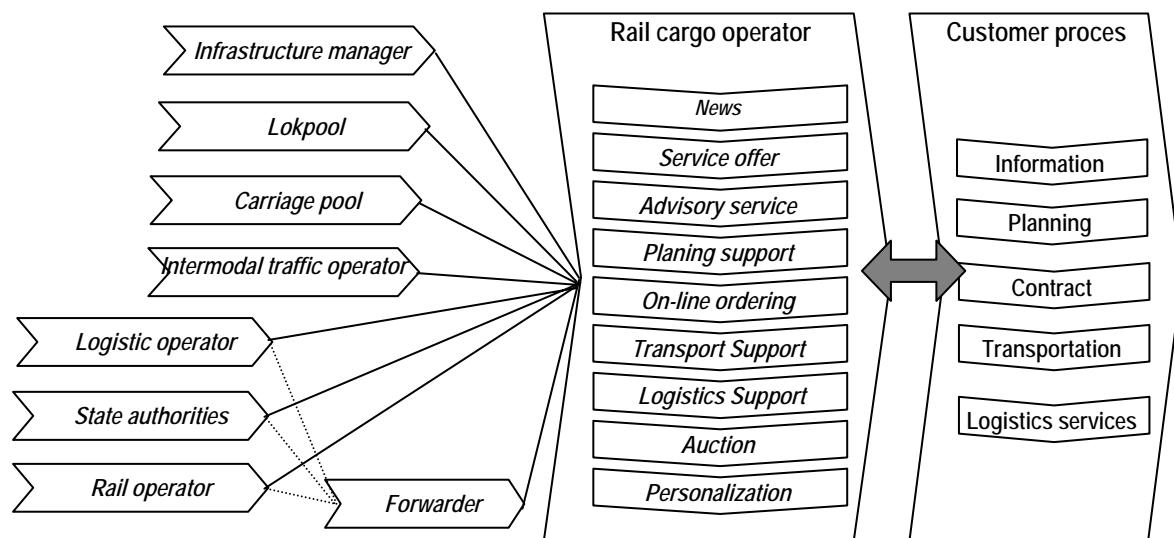


Figure 3: Structure of the process portal for transport and logistic

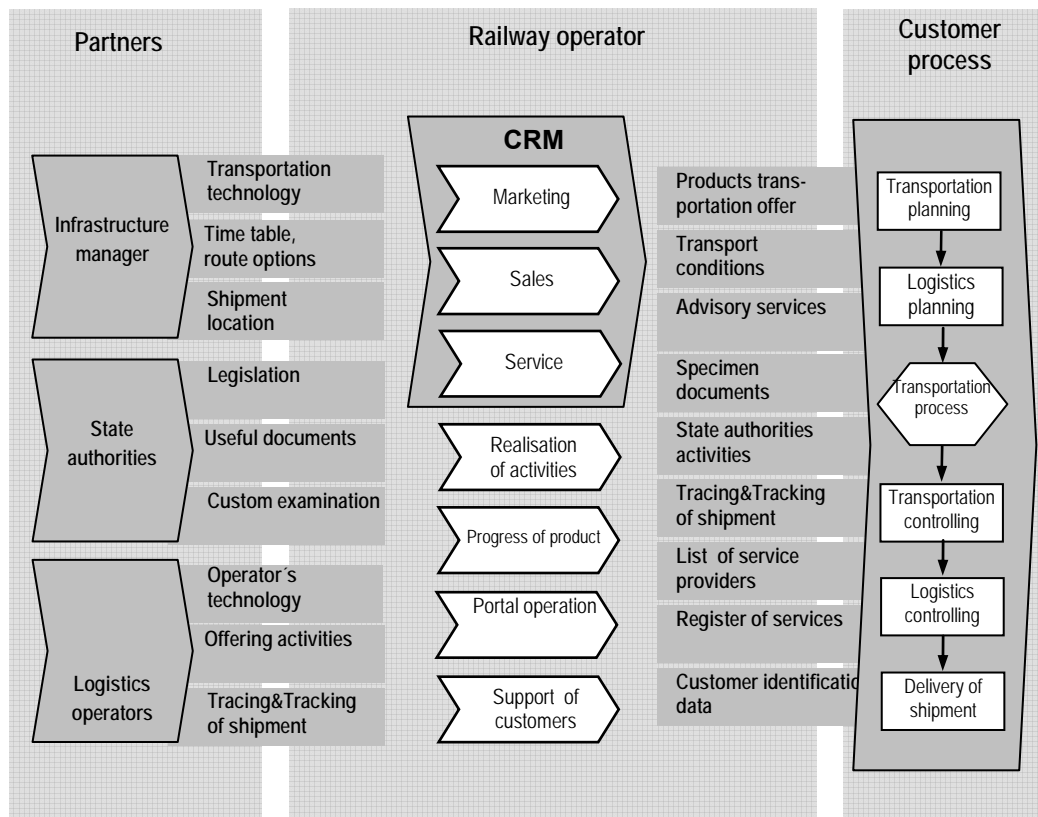


Figure 4: Activities of the process portal for transport and logistics

5 CONCLUSION

The providing of transport services is very specific due to technological processes, especially in rail transport. The main condition to make railway transportation more attractive is to provide information on qualitative sufficient level. Railway cargo companies have created an internet portal nowadays, where they can concentrate all the necessary information concerning the transport and ancillary services in one place. Second, a higher level of the use of advanced information technologies is the internet portal operation.

Process portal supported by the CRM software solution makes it possible for the railway cargo operator to support the whole transportation and logistics customer's process and to focus on the individual customers requests by using the modern information technologies with a view to obtain the loyal customers in a long term.

Customers evaluate the needs of transportation as a part of the distribution process of goods only, products and theirs interest is to make the process most efficient, highest quality and most cost-effective. A premise can be operating the process portal as well the strategy of customer relationship management (CRM), which offer an answer to the question how to attract and keep customers.

In this relation the railway cargo operator offers the whole transportation and logistic plan as a complex product.

Specific realisation of the designed transport and logistic process portal architecture depends on the rail cargo operator and on its surroundings. The critical factors are the customers, partners' accessibility and existing IT infrastructure. Process portal can help the rail operator to be a leader on the transport market. Actually that is a chance for railway cargo companies to participate in logistics chains and to offer qualitative services and to get more shipments by rail as well on south-north European corridors.

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